

# RECLAMATION

*Managing Water in the West*

**Draft Environmental Assessment**

**Water Acquisition from East Side Canal &  
Irrigation Company for East Bear Creek  
Unit of San Luis National Wildlife Refuge  
(2011-2016)**

**February 2011**



U.S. Department of the Interior  
Bureau of Reclamation  
Mid-Pacific Region  
Regional Office  
Sacramento, CA

## **Mission Statements**

The mission of the Department of the Interior is to protect and provide access to our Nation's natural and cultural heritage and honor our trust responsibilities to Indian Tribes and our commitment to island communities.

The mission of the Bureau of Reclamation is to manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public.

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## List of Acronyms and Abbreviations

AF	Acre-feet
APE	Area of Potential Effect
Company	East Side Canal & Irrigation Company
CNDDDB	California Natural Diversity Database
CVPIA	Central Valley Project Improvement Act
District	Stevinson Water District
EA	Environmental Assessment
EPA	U.S. Environmental Protection Agency
ESA	Federal Endangered Species Act
FWCA	Fish and Wildlife Coordination Act
gpm	gallons per minute
ITA	Indian Trust Assets
MBTA	Migratory Bird Treaty Act
mg/l	milligrams per liter
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NRHP	National Register of Historic Places
NWR	National Wildlife Refuge
PEIS	Programmatic Environmental Impact Statement
Reclamation	Bureau of Reclamation
Service	U.S. Fish and Wildlife Service
SHPO	State Historic Preservation Officer
Unit	East Bear Creek Unit of the San Luis NWR

# Section 1 Purpose and Need for Action

## 1.1 Introduction

In conformance with the National Environmental Policy Act of 1969 (NEPA), as amended, the Bureau of Reclamation (Reclamation) has prepared this Environmental Assessment (EA) to evaluate and disclose any potential environmental impacts associated with Reclamation's acquisition of water from the East Side Canal & Irrigation Company (Company) and conveyance of that water to the East Bear Creek Unit (Unit) of the San Luis National Wildlife Refuge (NWR) Complex. Reclamation proposes to purchase water supplies annually from the Company between March 1, 2011, through and including February 28, 2016. This proposed acquisition is being undertaken pursuant to, and would be in full compliance with, Sections 3406(b)(3) and 3406(d)(2) of Title XXXIV of the Central Valley Project Improvement Act (CVPIA), which authorizes new water supply contracts for fish and wildlife purposes.

Sections 3406(d)(1) and (d)(2) of the CVPIA requires the Secretary of the Interior to provide firm delivery of Level 2 and Level 4 water supplies to the various wetland habitat areas identified in the Bureau of Reclamation's *Report on Refuge Water Supply Investigations* (Reclamation, 1989) and the *San Joaquin Basin Action Plan/Kesterson Mitigation Plan* (Department of the Interior et al, 1989). These reports describe water needs and delivery requirements for each wetland habitat area to accomplish the stated refuge management objectives. In the 1989 Reclamation report, the average annual historical supplies were termed "Level 2" and the supplies needed for optimum habitat management were termed "Level 4". This EA focuses on the potential impacts of purchasing up to 7,295 acre-feet (AF) of Purchased Water per year from the Company for the period of March 1, 2011 through February 28, 2016 to meet Level 2 water needs at the Unit.

Environmental documentation has been previously prepared that addresses the overall impacts of acquiring full Level 4 supplies for the refuges, the conveyance of water to the refuges, and use of water on the refuges (see Section 7.0, References). The overall impacts of implementing the CVPIA, including providing Level 4 water supplies to the refuges, are addressed in a Final Programmatic Environmental Impact Statement (PEIS) (Department of the Interior 1999).

This EA: (1) describes the existing environmental resources in the project area; (2) evaluates the effects of the alternatives (including the Proposed Action) on the resources; and (3) proposes measures to avoid, minimize, or mitigate any adverse effects. This EA is in compliance with NEPA and Council on Environmental Quality regulations (40 CFR 1500-1508). Reclamation has also prepared a Finding of No Significant Impact (FONSI) which explains why the Proposed Action will not have any significant effects on the human environment.

## 1.2 Purpose and Need

The purpose of the Proposed Action is for Reclamation to purchase up to 7,295 AF of water per year, during water years 2011 through 2016, to meet the Unit's Level 2 requirements to provide critical wetland habitats for the benefit of migratory waterfowl, other migratory birds, and wetland-dependent wildlife. The water year is defined as March 1 through February of the following year. Level 2 water is needed to meet the Unit's average historical use, as identified in the 1989 Reclamation report.

## 1.3 Potential Resource Issues

The resource areas listed below have the potential to be affected by the Proposed Action and are discussed further in Section 3.

- Surface Water Resources
- Groundwater Resources
- Biological Resources
- Cultural Resources
- Indian Trust Assets
- Environmental Justice
- Climate Change

## 1.4 Resources Not Analyzed in Detail

It was determined that the following resources would not be impacted by the Proposed Action and are therefore not analyzed in this EA: air quality, geology and soils, land use, fisheries, recreation, transportation, noise, visual resources, growth, and hazards and hazardous materials.

## **Section 2     Alternatives Including Proposed Action**

### **2.1    No Action Alternative**

Reclamation has an obligation to provide Level 2 water under CVPIA and a Memorandum of Understanding with the U.S. Fish and Wildlife Service (Service). Absent this water purchase, water available for acquisition from the Company would likely be sold or temporarily stored for future uses. The No Action Alternative is not likely to result in any appreciable change or cause any measurable effects in the or Company's water management operations or water supply.

### **2.2    Proposed Action Alternative**

The Proposed Action Alternative consists of Reclamation purchasing up to 7,295 AF of Purchased Water per year (between March 1, 2011 through and including February 28, 2016) from the Company to meet refuge water needs at the East Bear Creek Unit of the San Luis NWR Complex. The Company would provide water to Reclamation through the delivery of surface water supplies that have been made available as the result of various water conservation projects. The Company's surface water supply includes pre-1914 appropriative and state-issued rights to the Merced and San Joaquin rivers and streams intersecting the East Side Canal such as Bear Creek, Owens Creek, and Duck Creek. In addition, the Company can, if needed, augment its surface water supply sources by groundwater pumping. However, groundwater would not be pumped to make surface water available for transfer under the Proposed Action.

Reclamation constructed a pumping plant and distribution facilities along Bear Creek in 2008 to divert water from Bear Creek for delivery to the Unit. The water delivery schedule and water supply sources for the proposed acquisition are summarized in Table 1 below. Figure 1 provides the general location of the Proposed Action.

**Table 1: Purchased Water Delivery Schedule to East Bear Creek Unit**

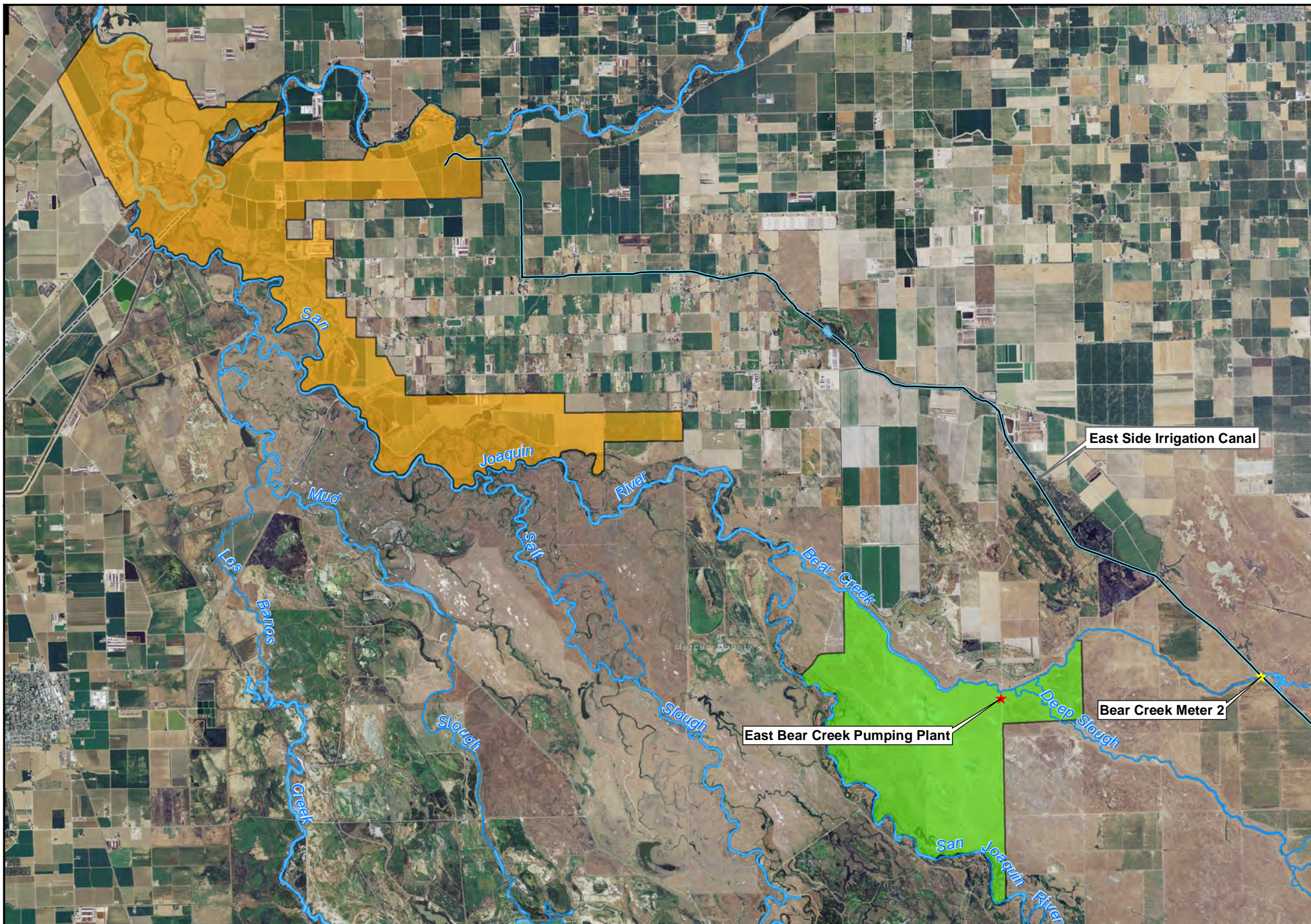
<b>Month</b>	<b>Base Water (AF)<sup>1</sup></b>	<b>Excess Water (AF)<sup>1</sup></b>	<b>Total Base and Excess Water (AF)</b>
March	910	0	910
April	800	0	800
May	910	0	910
June	800	100	900
July	0	510	510
August	0	710	710
September	800	400	1,200
October	767	588	1,355
November	0	0	0
December	0	0	0
January	0	0	0
February	0	0	0
<b>Annual Total</b>	<b>4,987</b>	<b>2,308</b>	<b>7,295</b>

The Company would deliver the water by releasing purchased water from the East Side Canal to Bear Creek pursuant to the delivery schedule. The water would flow down Bear Creek to the Unit's pumping plant on Bear Creek. Per the Company's Agreement with Reclamation, the Company will maintain sufficient water in Bear Creek at all times during water delivery to help prevent cavitation at the Unit's pumping plant intake on Bear Creek.

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<sup>1</sup> Amounts include estimated losses and water required to maintain surface elevation of 66 feet above sea level at East Bear Pumping Plant.





- Stevenson Water District
- East Bear Creek Unit

## Water Acquisition from East Side Canal & Irrigation Company for East Bear Creek Unit

Date: April 14, 2010, Revised 1/27/11  
 File Name: N:\SpecialProjects\EastBear\Stevinson\WD\EastBearStevinson.mxd





## **Section 3      Affected Environment & Environmental Consequences**

The Company's Service Area is located at the confluence of the San Joaquin and Merced Rivers in Merced County within the San Joaquin Valley (Figure 1). The County is bounded by the Sierra Nevada Mountains to the east and the Pacific Coastal Range to the west. The project region is characterized by flat valley lowland agriculture, with a climate that is cool and moist in the winter and hot and dry in the summer.

Extending from the Mariposa Bypass in the south to the Merced River in the north, a distance of about 20 miles, the East Side Canal is operated and maintained by the Company. It is the main water conveyance system and intersects Bear and Owens creeks and Duck Slough.

The Unit is located east of the San Joaquin River, in Merced County. The Refuge includes Bear Creek and the San Joaquin River and contains natural grasslands, vernal pools, riparian floodplain habitat, irrigated pasture and small-grain production lands.

A list of prior environmental documentation related to this project is located in the references section (Section 7.0). This environmental documentation was used in preparing this EA and is incorporated into this document by reference.

### **3.1      Surface Water Resources**

#### **3.1.1      Affected Environment**

The Unit is managed primarily for migratory waterfowl, shorebirds, marsh and water birds and their associated habitat types, as well as for listed species. The Company is located in Merced County at the confluence of the Merced and San Joaquin rivers and delivers over 33,000 AF of surface water to approximately 13,000 acres of farmlands on an annual basis. The majority of the water delivered by the Company is supplied by Merced Irrigation District (MID). This water, delivered by MID, is the subject of a judicial decree that resulted from litigation, which was settled in approximately 1930. The water is released by MID at the western boundary of MID into various streams among which are Bear and Owens creeks. In addition company receives natural flow and foreign water in named streams which originate in the Sierra Nevada foothills (Bear Creek, Owens Creek, Duck Slough, and Deadman Creek) pursuant to appropriate licenses (#5940, #5941 and #6222) that flow through the eastern section of the Grassland Ecological Area.

#### **3.1.2      Environmental Consequences**

##### No Action

Under the No Action Alternative, no changes would occur to the operations or water supply for the Company. The No Action Alternative is not likely to result in any appreciable change in the Company's water management operations or cause any

measurable effects. Absent this water purchase, water available for acquisition from the Company would likely be sold or temporarily stored for future uses and the Unit would not receive its Level 2 water needs.

#### Proposed Action

The Proposed Action would deliver water to Unit wetland areas on a schedule that meets refuge water needs as compared to the No Action Alternative. Therefore, the Proposed Action provides a beneficial effect to wetland habitat areas located within the Unit by providing a water supply of suitable quality on a delivery schedule that meets their needs.

The Proposed Action would not result in significant impacts San Joaquin River flows. There would be a negligible water quality benefit to the San Joaquin River basin due to improved water quality applied to the Unit.

The Proposed Action would result in no substantial change or impact to CVP operations or to Delta pumping by the CVP. The acquired water would be delivered to the refuge using existing conveyance facilities. The conveyance of water would not impact existing water supplies.

## 3.2 Groundwater Resources

### **3.2.1 Affected Environment**

The Company's service area is located in the central portion of the San Joaquin groundwater basin in a hydrogeologically complex area where multiple groundwater flow directions are present, different types of water are mixing, and the geology is largely a series of discontinuous layers of sands and clays. Water percolating from irrigation and seeping from canals and laterals recharge the groundwater beneath the Company's service area. Deep percolation of applied water from these sources is greater than average annual extractions from the basin. As a result, in wet years, a high water table is observed in the southern portion of the Company's service area.

### **3.2.2 Environmental Consequences**

#### No Action

Under the No Action Alternative, no changes would occur to the operations or water supply for the Company. As a result, there would be no effect on groundwater resources in the area.

#### Proposed Action

The Proposed Action would not adversely impact groundwater resources in the area because no groundwater would be pumped. The acquired surface water would be delivered to the refuge using existing conveyance facilities. The conveyance of water would not impact existing water supplies.

### 3.3 Biological Resources

#### 3.3.1 Affected Environment

The habitats present at the Unit are natural valley grasslands and developed marsh. The Unit is managed primarily for migratory waterfowl, shorebirds, marsh and water birds, and their associated habitat types as well as for listed species. A species list, included in Table 2 below, was generated from the USFWS Sacramento Field Office's website on November 30, 2010 (USFWS 2010).

**Table 2: Species Identified as Potentially Occurring in the Arena, Gustine, San Luis Ranch, Stevinson, and Turner Ranch USGS 7.5-minute Quadrangles**

Common Name	Scientific Name	Federal/ State Status <sup>1</sup>	Habitat in Area
<b>INVERTEBRATES</b>			
<i>Branchinecta conservacion</i>	Conservancy fairy shrimp	FE	No
<i>Branchinecta longiantenna</i>	Longhorn fairy shrimp <sup>3</sup>	FE	No
<i>Branchinecta lynchi</i>	Vernal pool fairy shrimp <sup>3</sup>	FT	No
<i>Desmocerus californicus dimorphus</i>	Valley elderberry longhorn beetle	FT	No
<i>Lepidurus packardii</i>	Vernal pool tadpole shrimp <sup>3</sup>	FE	No
<b>FISH</b>			
<i>Acipenser medirostris</i>	Green sturgeon <sup>2, 3</sup>	FT	No
<i>Hypomesus transpacificus</i>	Delta smelt	FT/ST	No
<i>Oncorhynchus mykiss</i>	Central Valley steelhead <sup>2, 3</sup>	FT	No
<i>Oncorhynchus tshawytscha</i>	Central Valley spring-run Chinook salmon <sup>2, 3</sup>	FT	No
<i>Oncorhynchus tshawytscha</i>	Winter-run Chinook salmon, Sacramento River <sup>2, 3</sup>	FE	No
<b>AMPHIBIANS</b>			
<i>Ambystoma californiense</i>	California tiger salamander, central population	FT	No
<i>Rana aurora draytonii</i>	California red-legged frog	FT	No
<b>REPTILES</b>			
<i>Gambelia (=Crotaphytus) sila</i>	Blunt-nosed leopard lizard	FE/SE	No
<i>Thamnophis gigas</i>	Giant garter snake	FT/ST	Yes
<b>BIRDS</b>			
<i>Buteo swainsoni</i>	Swainson's hawk	ST	Yes
<b>MAMMALS</b>			
<i>Dipodomys nitratoideis exilis</i>	Fresno kangaroo rat	FE	No
<i>Vulpes macrotis mutica</i>	San Joaquin kit fox	FE/ST	No
<b>PLANTS</b>			
<i>Chamaesyce hooveri</i>	Hoover's spurge <sup>3</sup>	FT	No
<i>Neostapfia colusana</i>	Colusa grass <sup>3</sup>	FT/SE	No

<sup>1</sup> FPE=Proposed Endangered, FPT=Proposed Threatened, FE=Endangered, FT=Threatened, FC=Candidate, ST=State Threatened

<sup>2</sup> Listed under the jurisdiction of National Oceanic and Atmospheric Administration, Fisheries

<sup>3</sup> Critical Habitat designated for this species

The Unit, as part of the San Luis NWR, is a major wintering ground and migratory stopover point for large concentrations of waterfowl, shorebirds and other waterbirds. Large flocks of northern shoveler, mallard, gadwall, wigeon, green-winged teal, cinnamon teal, northern pintail, ring-billed duck, canvasback, ruddy duck, and snow, Ross' and white-fronted geese utilize seasonal and permanent wetlands that make up a quarter of the refuge. Waterfowl generally remain until mid-April before beginning their journey north to breeding areas. Some mallard, gadwall, and cinnamon teal stay through the spring and summer and breed on the refuge. (USFWS website 2010)

Shorebirds, including sandpipers and plovers, can be found in the tens of thousands from autumn through spring. Large flocks of dunlin, long-billed dowitchers, least sandpipers and western sandpipers can be found feeding in shallow seasonal wetlands, whereas flocks of long-billed curlews are found using both wetlands and grasslands. Over 25 species of shorebirds have been documented at the San Luis NWR. (USFWS website 2010)

The Unit supports a rich botanical community of native bunchgrasses, native and exotic annual grasses, forbs, and native shrubs. Trees, such as valley oak, cottonwood, and willow are found along riparian corridors. Coyotes, desert cottontail rabbits, ground squirrels, western meadowlarks, yellow-billed magpies, loggerhead shrikes, northern harriers, and white-tailed kites are found within these areas. (USFWS website 2010)

### **3.3.2 Environmental Consequences**

#### No Action

Under the No Action Alternative, fish and wildlife species present within the Unit may be negatively impacted without additional water being delivered to support wildlife habitat. Without the Proposed Action, Level 2 needs would not be met and could result in the loss of wetland habitat within the Unit.

#### Proposed Action

The Proposed Action is not anticipated to have the potential to adversely affect any special-status species. There is no construction associated with the Proposed Action; therefore, no impacts to biological resources, including special-status species, are anticipated. The Proposed Action will help to sustain wetland habitat within the Unit, thereby continuing to support vital habitat to those species relying on water.

Biological impacts and benefits associated with the conveyance of Level 4 water to the San Luis NWR Complex, and the use of Level 4 water on the Unit have been previously addressed in other NEPA documentation (Reclamation 2001, 2004 and 2008). Also, with implementation of the Proposed Action, CVP operations would be consistent with existing operating and conveyance agreements. The Proposed Action is consistent with the actions covered by previous analyses and would not result in any changes from existing operations or conditions.

## 3.4 Cultural Resources

### 3.4.1 Affected Environment

Cultural resources is a term used to describe both ‘archaeological sites’ depicting evidence of past human use of the landscape and the ‘built environment’ which is represented in structures such as dams, roadways, and buildings. The National Historic Preservation Act (NHPA) of 1966 is the primary Federal legislation which outlines the Federal Government’s responsibility to cultural resources. Section 106 of the NHPA requires the Federal Government to take into consideration the effects of an undertaking listed on cultural resources on or eligible for inclusion in the National Register of Historic Places (NRHP). Those resources that are on or eligible for inclusion in the NRHP are referred to as historic properties.

The Section 106 process is outlined in the Federal regulations at 36 CFR Part 800. These regulations describe the process that the Federal agency (Reclamation) takes to identify cultural resources and the level of effect that the proposed undertaking will have on historic properties. In summary, Reclamation must first determine if the action is the type of action that has the potential to affect historic properties. If the action is the type of action that has the potential to affect historic properties, Reclamation must identify the area of potential effects (APE), determine if historic properties are present within that APE, determine the effect that the undertaking will have on historic properties, and consult with the State Historic Preservation Office (SHPO) or Tribal Historic Preservation Officer (THPO), where applicable, to seek concurrence on Reclamation’s findings. In addition, Reclamation is required through the Section 106 process to consult with Indian Tribes concerning the identification of sites of religious or cultural significance, and consult with individuals or groups who are entitled to be consulting parties or have requested to be consulting parties.

### 3.4.2 Environmental Consequences

#### No Action

Under the No Action Alternative, Reclamation would not purchase water. The Company and Reclamation would continue to operate as they always have with no change, thus resulting in no undertaking as defined by the NHPA.

#### Proposed Action

The Proposed Action would acquire water for Unit wetland areas on a schedule that meets refuge water needs. Water would be conveyed through existing facilities and would be used for wildlife refuge or wetland habitat water management. No ground disturbing activities, including excavation or construction are required to convey the water. Since the Proposed Action has no potential to affect historic properties, no cultural resources would be impacted as a result of the Proposed Action pursuant to 36 CFR Part 800.3(a)(1).

## 3.5 Indian Trust Assets

### 3.5.1 Affected Environment

Indian Trust Assets (ITAs) are legal interests in property or rights held in trust by the United States for Indian Tribes or individuals. Trust status originates from rights imparted by treaties, statutes, or executive orders. These rights are reserved for, or granted to, tribes. A defining characteristic of an ITA is that such assets cannot be sold, leased, or otherwise alienated without Federal approval.

Indian reservations, Rancherias, and allotments are common ITAs. Allotments can occur both within and outside of reservation boundaries and are parcels of land where title is held in trust for specific individuals. Additionally, ITAs include the right to access certain traditional use areas and perform certain traditional activities.

It is Reclamation policy to protect ITAs from adverse impacts resulting from its' programs and activities whenever possible. Types of actions that could affect ITAs include an interference with the exercise of a reserved water right, degradation of water quality where there is a water right or noise near a land asset where it adversely affects uses of the reserved land.

### 3.5.2 Environmental Consequences

#### No Action

The No Action Alternative would have no effect on ITAs.

#### Proposed Action

Due to the nature of the action (i.e., no construction activities), there are no impacts to ITAs as a result of the Proposed Action.

## 3.6 Environmental Justice

### 3.6.1 Affected Environment

Executive Order 12898 requires each Federal agency to achieve environmental justice as part of its mission, by identifying and addressing disproportionately high adverse human health or environmental effects, including social and economic effects, of its programs and activities on minority populations and low-income populations of the United States.

### 3.6.2 Environmental Consequences

#### No Action

The No Action Alternative would have no effect on low-income or minority individuals within the project area.

#### Proposed Action

No significant changes in agricultural communities or practices would result from this acquisition. Accordingly, the Proposed Action would not have any significant or disproportionately negative impact on low-income or minority individuals within the project area.

### 3.7 Global Climate Change

#### **3.7.1 Affected Environment**

The United Nations Intergovernmental Panel on Climate Change predicts that changes in the earth's climate will continue through the 21st century and that the rate of change may increase significantly in the future because of human activity. Many researchers studying California's climate believe that changes in the earth's climate have already affected California and will continue to do so in the future. Climate change may seriously affect the State's water resources. Temperature increases could affect water demand and aquatic ecosystems. Changes in the timing and amount of precipitation and runoff could occur.

Climate change is identified in the 2005 update of the California Water Plan (Bulletin 160-05) as a key consideration in planning for the State's future water management. The 2005 Water Plan update qualitatively describes the effects that climate change may have on the State's water supply. It also describes efforts that should be taken to quantitatively evaluate climate change effects for the next Water Plan update.

#### **3.7.2 Environmental Consequences**

##### No Action

The No Action Alternative would have no effect on climate change.

##### Proposed Action

The Proposed Action would not include any significant change on the composition of the atmosphere and therefore would not result in adverse impacts to climate change.



## Section 4 Cumulative Impacts

According to the Council on Environmental Quality (CEQ) regulations for implementing the procedural provisions of NEPA, a cumulative impact is defined as *the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions*. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.

The Proposed Action is for Reclamation to purchase up to 7,295 AF of Purchased Water per year over a five-year period from the Company to meet the Unit's Level 4 water supply requirements for water years 2011 through 2016 to manage wetland habitats. The Proposed Action would be implemented pursuant to the requirements of the CVPIA that requires water acquisition to maintain enhanced water supplies for wildlife refuges and wildlife management areas in the Central Valley. The overall impacts of implementing the CVPIA, including incremental Level 4 water acquisitions, are evaluated in the PEIS (Department of Interior 1999), which was prepared pursuant to NEPA requirements.

The Proposed Action would not result in cumulative impacts to any of those resources described within this EA.

## **Section 5      Consultation and Coordination**

This EA has been prepared in accordance with the requirements of NEPA. Reclamation is also complying with other applicable laws including the Migratory Bird Treaty Act, Clean Water Act of 1977, Clean Air Act of 1970, Endangered Species Act, Fish and Wildlife Coordination Act, National Historic Preservation Act of 1966, Executive Order 11988-Floodplain Management, Executive Order 11990-Protection of Wetlands, the Council of Environmental Quality Memorandum-Analysis of Prime or Unique Farmlands, and the Wild and Scenic Rivers Act.

## **Section 6     List of Preparers and Reviewers**

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Linda Colella, Water Acquisition Program Specialist, Mid-Pacific Region

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Amy Barnes, Archaeologist, Mid-Pacific Region

Patricia Rivera, Native American Affairs, Mid-Pacific Region

## Section 7    References

- Bureau of Reclamation. 1989. *A Report on Refuge Water Supply Investigations*
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